

WHAT IS CLAIMED IS:

1. An apparatus for the self-measurement of intraocular pressure by a user, the apparatus comprising:
 - a housing;
 - 5 a tonometer disposed within the housing and having a tonometer tip;
 - an adjustment mechanism in communication with the tonometer for positioning the tonometer tip in contact with a test eye of the user;
 - an illuminator mounted within the housing adjacent the tonometer tip;
 - 10 a receiver aligned with the tonometer tip for receiving an applanation pattern created by contact of the tonometer tip with the test eye; and
 - 15 a display in communication with the receiver for displaying the applanation pattern to an observing eye of the user,
wherein the intraocular pressure of the test eye is determined from a force applied by the tonometer tip upon observation of a selected applanation pattern by the observing eye.
2. The apparatus according to claim 1, wherein the receiver includes a video camera, and the display includes at least one video monitor.
3. The apparatus according to claim 1, wherein the receiver includes a beam splitting mirror, and the display includes a display mirror aligned with the beam splitting mirror.
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4. The apparatus according to claim 1, wherein the housing includes a base, a guide plate movably positionable with respect to the base, and a support extending upwardly from the guide plate, the support having the tonometer, receiver, and display mounted thereon.
- 25 5. The apparatus according to claim 4, further comprising a chin-forehead rest attached to the base.

6. The apparatus according to claim 4, further comprising a pair of lens holders mounted within the housing and arranged to receive corrective lenses therein.

7. The apparatus according to claim 1, wherein the housing is
5 arranged to be hand-held and includes first and second ocular portions, wherein the tonometer tip and receiver are disposed within the first ocular portion, and the display is disposed within the second ocular portion.

8. The apparatus according to claim 1, further comprising a video recorder in communication with the receiver.

10 9. The apparatus according to claim 1, wherein the selected applanation pattern is an applanation endpoint pattern.

10. A hand-held apparatus for the self-measurement of intraocular pressure by a user, the apparatus comprising:

15 a housing having a first ocular portion and a second ocular portion;
a tonometer disposed at least partially within the first ocular portion and having a tonometer tip;

an adjustment mechanism in communication with the tonometer for positioning the tonometer tip in contact with a test eye of the user;

20 an illuminator mounted within the housing adjacent the tonometer tip;
a receiver disposed within the first ocular portion and aligned with the tonometer tip for receiving an applanation pattern created by contact of the tonometer tip with the test eye; and

25 a display disposed in the second ocular portion and in communication with the receiver for displaying the applanation pattern to an observing eye of the user,

wherein the intraocular pressure of the test eye is determined from a force applied by the tonometer tip upon observation of a selected applanation pattern by the observing eye.

11. The apparatus according to claim 10, wherein the receiver includes a video camera, and the display includes at least one video monitor.

12. The apparatus according to claim 10, wherein the receiver includes a beam splitting mirror, and the display includes a display mirror aligned
5 with the beam splitting mirror.

13. The apparatus according to claim 12, further comprising at least one focusing lens disposed within the housing and aligned with the display mirror for focusing the applanation pattern for the observing eye.

14. The apparatus according to claim 10, wherein the tonometer
10 includes a force applicator for actuating movement of the tonometer tip to apply a force to the test eye, a strain gauge in communication with the force applicator for sensing an applied force, and a microprocessor in communication with the strain gauge for controlling the applied force and determining the intraocular pressure from the applied force.

15. The apparatus according to claim 10, wherein a first adjustment mechanism is provided on a top surface of the housing and a second adjustment mechanism is provided on a bottom surface of the housing such that the housing is operable in a first orientation and in a second orientation rotated 180° about its longitudinal axis, the housing including an aperture arranged to receive a member
20 for activating one of the first and second adjustment mechanisms depending upon the orientation of the housing.

16. The apparatus according to claim 10, further comprising a plate including a first connector provided on a bottom surface thereof and the adjustment mechanism provided on a top surface thereof, wherein the housing includes a second connector on both a top and bottom surface thereof arranged to mate with the first connector such that the housing is operable in a first orientation and in a second orientation rotated 180° about its longitudinal axis.
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17. The apparatus according to claim 10, further comprising an LCD display for displaying the intraocular pressure reading.

18. The apparatus according to claim 10, further comprising a video recorder in communication with the receiver.

5 19. The apparatus according to claim 10, wherein the selected
applanation pattern is an applanation endpoint pattern.

20. A method for the self-measurement of intraocular pressure by
a user, the method comprising:

10 providing a housing having a tonometer disposed therein, the
tonometer having a tonometer tip;

placing a test eye and an observing eye of the user adjacent to the
housing;

illuminating the test eye;

positioning the tonometer tip in contact with the test eye;

15 receiving an applanation pattern created by contact of the tonometer
tip with the test eye;

displaying the applanation pattern to the observing eye; and

20 determining the intraocular pressure of the test eye based on the force
applied by the tonometer tip upon observation of a selected applanation pattern by
the observing eye.

21. The method according to claim 20, wherein the applanation
pattern is received by a beam splitting mirror and displayed using a display mirror.

22. The method according to claim 20, wherein the applanation
pattern is received with a video camera and displayed using at least one video
25 monitor.

23. The method according to claim 20, further comprising instilling
dye and anesthetic substances in the test eye.

24. The method according to claim 20, further comprising viewing the applanation pattern through corrective lenses.

25. The method according to claim 20, further comprising rotating the housing 180° about its longitudinal axis to obtain a measurement of intraocular pressure for another test eye.
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26. The method according to claim 20, further comprising recording the applanation pattern with a video recorder.

27. The method according to claim 20, wherein determining the intraocular pressure includes observing an applanation endpoint pattern.